

WHAT IS CLAIMED IS:

1. A cord for reinforcing elastomer articles of multiple filaments having a diameter (D) range of .10 to .45 mm, each filament having at least a tensile strength of $-2000 \times D + 4400$ MPa, where D is the filament diameter in mm.

2. The cord defined in claim 1 wherein D ranges from .14 to .42 mm.

3. The cord defined in claim 1 wherein the cord construction is selected from the group consisting of 2x, 3x, 4x, 5x, 6x, 7x, 8x, 11x, 12x, 27x, 1+2, 1+3, 1+4, 1+5, 1+6, 1+7, 1+8, 1+14, 1+15, 1+16, 1+17, 1+18, 1+19, 1+20, 1+26, 2+1, 2+2, 2+5, 2+6, 2+7, 2+8, 2+9, 2+10, 2/2, 2/3, 2/4, 2/5, 2/6, 3+1, 3+2, 3+3, 3+4, 3+6, 3+9, 3/9, 3+9+15, 4x4, 5/8/14, 7x2, 7x3, 7x4, 7x7, 7x12, 7x19, 5+1, 6+1, 7+1, 8+1, 11+1, 12+1, 2+7+1, 1+4+1, 1+5+1, 1+6+1, 1+7+1, 1+8+1, 1+14+1, 1+15+1, 1+16+1, 1+17+1, 1+18+1, 1+19+1, 1+20+1, 2+2+8, 2+6+1, 2+7+1, 2+8+1, 2+9+1, 2+10+1, 2+2+8+1, 3+9+15+1, 27+1, 1+26+1, 7x2+1, 3+9+1, 3/9+1, 7x12+1 and 7x19+1.

4. The cord defined in claim 1 wherein D ranges from .18 to .38 mm.

5. The cord defined in claim 3, wherein the cord construction is selected from the group consisting of 7x19x.20, 2x.18, 2+2x.30, 2+2x.35, 2x.30, 2x.35, 2+2x.30, 2x.23, 3+2x.33, 3+4x.38, 3+2x.33, 3+3x.33, 1x.24/6x.22+1, 1x.18/6x.16+1, 3+4x.38, 3x.22/9x.20+1 and 2+7x.22+1.

6. A cord defined in claim 3 wherein said cord construction is selected from the group consisting of

2x, 3x, 4x, 5x, 6x, 8x, 11x, 12x, 1+2, 1+3, 1+4, 1+5,
1+6, 1+7, 1+8, 1+14, 1+15, 1+16, 1+17, 1+18, 1+19,
1+20, 2+1, 2+7, 2+8, 2+9, 2+10, 2/2, 2/3, 2/4, 2/5,
2/6, 3+1, 3+2, 3+3, 3+4, 3+9, 3/9, 3+9+15, 5/8/14,
5 7x12, 7x19, 5+1, 6+1, 7+1, 8+1, 11+1, 12+1, 2+7+1,
1+4+1, 1+5+1, 1+6+1, 1+7+1, 1+8+1, 1+14+1, 1+15+1,
1+16+1, 1+17+1, 1+18+1, 1+19+1, 1+20+1, 3+9+1, 3/9+1,
7x12+1 and 7x19+1.

7. The cord defined in claim 3 wherein said
10 cord construction is selected from the group
consisting of 2x, 3x, 4x, 5x, 6x, 8x, 11x, 12x, 1+2,
1+3, 1+4, 1+5, 1+6, 1+7, 1+8, 1+14, 2+2, 2+5, 2+6,
2+7, 2+8, 2+9, 2+10, 2+2+8, 2/2, 2/3, 2/4, 2/5, 2/6,
3+2, 3+3, 3+4, 3+6, 3+9, 3+9+15, 27x, 1+26, 4x4,
15 5/8/14, 7x2, 12+1, 3+9+1, 1+6+1, 2+6+1, 2+7+1, 2+8+1,
2+9+1, 2+10+1, 2+2+8+1, 3+9+15+1, 27+1, 1+26+1 and
7x2+1.

8. A pneumatic tire with a carcass having
parallel cords, two sidewalls spaced apart a distance,
20 which in the axial direction determines the general
width of the tire section, two beads each one of which
around which are turned up, from the inside toward the
outside, the ends of the cords of the carcass, a tread
disposed on the crown of said carcass, a belt
25 structure that is circumferentially inextensible
interposed between the tread and the carcass, and
carcass plies disposed in said sidewalls between said
two beads and said crown of said carcass, said belt
structure having a width that is substantially equal
30 to that of the tread and having carcass plies of
elastomeric fabric reinforced with metallic cords,
said metallic cords being comprised of a plurality of
filaments having a diameter (D) ranging from .10 to
.45 mm, each filament having a tensile strength of

-2000x D + 4400 MPa, where D is the filament diameter in mm.

9. The pneumatic tire defined in claim 8 wherein D ranges from .14 to .42 mm.

5 10. The pneumatic tire defined in claim 8
wherein the cord construction is selected from the
group consisting of 2x, 3x, 4x, 5x, 6x, 7x, 8x, 11x,
12x, 27x, 1+2, 1+3, 1+4, 1+5, 1+6, 1+7, 1+8, 1+14,
1+15, 1+16, 1+17, 1+18, 1+19, 1+20, 1+26, 2+1, 2+2,
10 2+5, 2+6, 2+7, 2+8, 2+9, 2+10, 2/2, 2/3, 2/4, 2/5,
2/6, 3+1, 3+2, 3+3, 3+4, 3+9, 3/9, 3+9+15, 5/8/14,
7x12, 7x19, 7x2, 5+1, 6+1, 7+1, 8+1, 11+1, 12+1,
2+7+1, 1+4+1, 1+5+1, 1+6+1, 1+7+1, 1+8+1, 1+14+1,
1+15+1, 1+16+1, 1+17+1, 1+18+1, 1+19+1, 1+20+1, 3+9+1,
15 3/9+1, 7x12+1 and 7x19+1.

11. The pneumatic tire defined in claim 10 wherein said cord construction is 1+5.

12. A pneumatic tire with a carcass having
parallel cords, two sidewalls spaced apart a distance,
20 which in the axial direction determines the general
width of the tire section, two beads each one of which
around which are turned up, from the inside toward the
outside, the ends of the cords of the carcass, a tread
disposed on the crown of said carcass, a belt
25 structure that is circumferentially inextensible
interposed between the tread and the carcass, and
carcass plies disposed in said sidewalls between said
two beads and said crown of said carcass, said belt
structure having a width that is substantially equal
30 to that of the tread and having at least one layer of
elastomeric fabric reinforced with metallic cords,
said metallic cords being comprised of a plurality of

filaments having a diameter (D) ranging from .10 to .45 mm, each filament having a tensile strength of $-2000 \times D + 4400$ MPa, where D is the filament diameter in mm.

5 13. The pneumatic tire defined in claim 12 wherein D ranges from .14 to .42 mm.

10 14. The pneumatic tire defined in claim 12 wherein the cord construction is selected from the group consisting of 2x, 3x, 4x, 5x, 6x, 7x, 8x, 11x, 12x, 27x, 1+2, 1+3, 1+4, 1+5, 1+6, 1+7, 1+8, 1+14, 1+15, 1+16, 1+17, 1+18, 1+19, 1+20, 1+26, 2+2, 2+5, 2+6, 2+7, 2+8, 2+9, 2+10, 2/2, 2/3, 2/4, 2/5, 2/6, 3+2, 3+3, 3+4, 3+9, 3+9+15, 27x, 1+26, 5/8/14, 7x2, 12+1, 3+9+1, 1+6+1, 2+6+1, 2+7+1, 2+8+1, 2+9+1, 15 2+10+1, 2+2+8+1, 3+9+15+1, 27+1, 1+26+1 and 7x2+1.

20 15. The pneumatic tire defined in claim 12 wherein said tire is an off-the-road tire of 36 inch and greater bead diameter with a carcass having cords, two sidewalls spaced apart a distance, which in the axial direction determines the general width of the tire section, two beads each one of which around which are turned up the ends of the cords of the carcass, a tread disposed on the crown of the carcass, and a belt structure that is circumferentially disposed between 25 the tread and the carcass, the belt structure having a width that is substantially equal to that of the tread and having at least one layer of elastomeric fabric reinforced with metallic cords, said metallic cords in at least one layer being of 7x19x.20+1 construction 30 with a gauge of 3.0 mm and a rivet of 1.62 mm.

16. The pneumatic tire of claim 15 wherein the inch strength of said one layer is 74,630 N.

17. The pneumatic tire of claim 16 wherein the cords are spaced at 5.5 EPI.

18. The pneumatic tire of claim 12 wherein said tire is an off-the-road tire of 36 inch and greater
5 bead diameter with a carcass having cords, two
sidewalls spaced apart a distance, which in the axial
direction determines the general width of the tire
section, two beads each one of which around which are
turned up the ends of the cords of the carcass, a
10 tread disposed on the crown of the carcass, and a belt
structure that is circumferentially disposed between
the tread and the carcass, the belt structure having a
width that is substantially equal to that of the tread
and having at least one layer of elastomeric fabric
15 reinforced with metallic cords, said metallic cords in
at least one layer being of 7x12x.22+1 construction
with a gauge of 2.34 mm and a rivet of 1.24 mm.

19. The pneumatic tire of claim 18 wherein the inch strength of said one layer is 74,550 N.

20. The pneumatic tire of claim 19 wherein the
20 cords are spaced at 7.1 EPI.

21. The pneumatic tire defined in claim 12
wherein said tire is an off-the-road tire of 36 inch
and greater bead diameter with a carcass having cords,
25 two sidewalls spaced apart a distance, which in the
axial direction determines the general width of the
tire section, two beads each one of which around which
are turned up the ends of the cords of the carcass, a
tread disposed on the crown of the carcass, and a belt
30 structure that is circumferentially disposed between
the tread and the carcass, the belt structure having a
width that is substantially equal to that of the tread

and having at least one layer of elastomeric fabric reinforced with metallic cords, said metallic cords in at least one layer being of 7x12x.25+1 construction with a gauge of 3.02 mm and a rivet of 1.44 mm.

5 22. The pneumatic tire of claim 21 wherein the inch strength of said one layer is 74,100 N.

23. The pneumatic tire of claim 22 wherein the cords are spaced at 5.7 EPI.

10 24. The pneumatic tire defined in claim 12 wherein belt structure includes first and second overlapped belts wherein said cords of said first and second belts are constructed of 2+2x.30.

15 25. The pneumatic tire defined in claim 12 wherein belt structure includes first and second overlapped belts wherein said cords of said first and second belts are constructed of 2+2x.35.

20 26. The pneumatic tire defined in claim 12 wherein belt structure includes first and second overlapped belts wherein said cords of said first and second belts are constructed of 2x.30.

27. The pneumatic tire defined in claim 12 wherein belt structure includes first and second overlapped belts wherein said cords of said first and second belts are constructed of 2x.35.

25 28. The pneumatic tire defined in claim 12 wherein belt structure includes first and second overlapped belts wherein said cords of said first and second belts are constructed of 2+2x.30.

29. The pneumatic tire defined in claim 12 wherein belt structure includes first and second overlapped belts wherein said cords of said first and second belts are constructed of 2x.23.

5 30. The pneumatic tire defined in claim 12 wherein belt structure includes first and second overlapped belts wherein said cords of said first and second belts are constructed of 2x.30.

10 31. The pneumatic tire defined in claim 12 wherein belt structure includes first, second, third and fourth radially overlapped belts wherein said cords of each of said belts are constructed of 3+2x.33.

15 32. The pneumatic tire defined in claim 31 further including a ply having a cord of 1x.24/6x.22+1.

20 33. The pneumatic tire defined in claim 12 wherein belt structure includes first, second, third and fourth radially overlapped belts wherein said cords of each of said belts are constructed of 3+4x.38.

 34. The pneumatic tire defend in claim 33 further including a ply having a cord of 1x.24/6x.22+1.

25 35. The pneumatic tire defined in claim 12 wherein belt structure includes first, second, third and fourth radially overlapped belts wherein said cords of each of said first and fourth belts are constructed of 3+2x.33 UT and said cords of each said
30 second and third belts, sandwiched between said first

and fourth belts are constructed of 3+3x.33.

36. The pneumatic tire defined in claim 35 further including a ply having a cord of 3x.22/9x.20+1.

5 37. The pneumatic tire defined in claim 12 wherein belt structure includes first, second, third and fourth radially overlapped belts wherein said cords of each of said belts are constructed of 3+4x.38.

10 38. The pneumatic tire defined in claim 37 further including a ply having a cord of 3x.22/9x.20+1.